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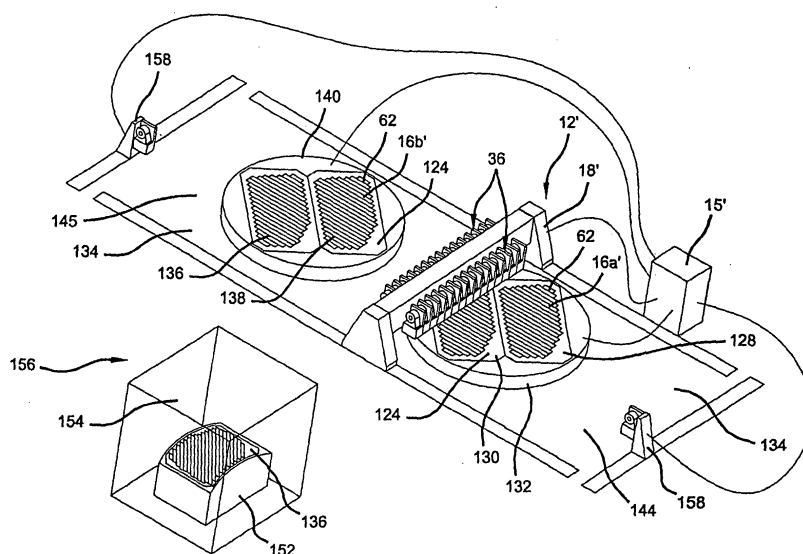
(54) **Method and device for the fabrication of composite material articles using several material dispensers and rotating work surfaces**

(57) A device for fabricating a composite article having a plurality of material dispensers to increase productivity. The device includes a structure defining a work surface datum, the plurality of material dispensers which are movable relative to the structure, where each of the material dispensers applies a strip material to the work surface datum along a predetermined axis, and wherein each of said predetermined axes are parallel to one another and where the strip material as applied to the work

surface datum forms a layer. A method for fabricating a composite using rotatable dispensers or using a rotatable work table.

Some of the dispensers apply the material in one direction whereas the other dispensers apply the material along a parallel axis in the opposite direction.

When several structures are used one is in an active region of the work area and an other one is in an inactive region.



**Figure 7**



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# EUROPEAN SEARCH REPORT

Application Number  
EP 03 07 8499

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	DE 33 31 494 A (GUETHLER RUDOLF) 21 March 1985 (1985-03-21) * the whole document *	1,3,10	B29C70/38 B29C70/20
X	US 5 954 917 A (ASHER DON L ET AL) 21 September 1999 (1999-09-21) * the whole document *	1,3,4,6	
A	DE 30 40 838 A (MESSERSCHMITT BOELKOW BLOHM) 13 May 1982 (1982-05-13) * the whole document *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B29C
<del>The present search report has been drawn up for all claims</del>			
Place of search		Date of completion of the search	Examiner
Munich		4 March 2004	Foulger, C
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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### CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-11



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**LACK OF UNITY OF INVENTION  
SHEET B**

Application Number  
EP 03 07 8499

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-11 (Group 1: independent device claim 1 and dependent claims 2 to 11).

Independent claim 1 discloses a device for fabricating a composite material article comprising a plurality of material dispensers applying a strip along parallel predetermined axis to form a layer.

The subject-matter of claim 1 is known from DE 3 331 494 (D1) cited in the search report.

Dependent device claim 2 concerns the material dispensers from which some apply the material in one direction on the work surface and the other ones apply the material along a parallel axis but in the opposite direction (see figure 2). The subject-matter of dependent claim 2 combined with the subject-matter of claim 1 is considered as the inventive concept of the first group of inventions.

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2. claims: 12-26 (Group 2: independent device claim 12 and its dependent claims 13 to 26)

Independent device claim 12 concerns a device comprising a plurality of dispensers and a plurality of structures wherein at least one of said structures is in an active region of said work area and an other one in an inactive region of the work area (see figure 7).

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3. claims: 27-32 (Group 3: independent method claim 27 and its dependent claims 28 to 32)

The third group of inventions concerns a method of fabricating a composite article providing several dispensers, applying strips of material as a first layer, rotating one of either the work surface or the dispensers and applying a second layer having a second orientation (see figure 8).

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 07 8499

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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04-03-2004

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 3331494	A	21-03-1985	DE 3331494 A1	21-03-1985
US 5954917	A	21-09-1999	NONE	
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82